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Determinants of Capital Structure in Textile Sector of Pakistan

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Abstract

With the application of regression with common effect this paper analyzed the empirical validity of two famous and formal theories (Trade off and Pecking order). We have selected four independent variables tangibility, size, profitability and growth and explored their relationships with the dependent variable leverage in textile sector companies. After proper filtration 132 firms were selected as final sample for analysis for the period of 2001-2009. Balance sheet analysis published by State Bank of Pakistan has been used for the purpose of collecting data. Among the four hypothesis, tangibility and size of the company were supporting the trade off theory where as profitability and growth supported pecking order theory. To check the stationarity of data six panel unit root tests have been applied which provided strong evidences of rejecting the unit root in the panel structure. The results of the regression showed that tangibility is most influential determinant in debt financing decision and positively associated with leverage which is a confirmation of hypothesized prediction of trade off theory. Size and profitability failed to support trade off theory with their negative coefficient and supported the hypothesized prediction of the Pecking order theory. Growth with its negative coefficient supported the trade off theory but the results are not reliable as it was not statistically significant. Thus keeping in view the four hypothesis and based on their results there is stronger support for the Pecking order theory in textile sector of Pakistan.

Key words: Capital structure, Leverage, Trade-off theory, Pecking Order theory, Textile sector, Pakistan

JEL Classification: G-32

1. Introduction

Capital structure can be defined as “The way a firm finances its assets through debt, equity or hybrid securities” Relationship of firm capital structure and its value has always been a debatable issue. It is considered as one of the hottest topic in corporate finance and capital structure decisions are considered very important and crucial made in financial management. From management point of view capital structure is a very effective mean to manage the cost of capital. Through an appropriate capital structure a firm can maximize its value i-e combined value of its debt and equity. A firm can go for different ways of financing its assets and the main objective is to achieve the optimal capital structure where the cost of capital is at minimum. More over a firm can be levered or unlevered. Companies having no debt financing is said to be unlevered while companies having debt financing is said to be levered. Financing behavior of firms can vary with respect to different aspects and this had initiated different capital structure theories.

Miller and Modigliani (1958) irrelevance theory suggests that the firm value is independent of its capital structure under certain assumptions. It was considered as a pioneering work and due to its unrealistic assumptions it gave birth to several other theories such as trade-off theory and pecking order theory (POT). These theories explain different aspects of capital structure but on the other hand empirical evidences are not always supporting the predictions. Some financial experts believe that the market value of the firm increases with the increase in leverage. This basically indicates that firm having more proportion of debt financing achieves the optimal capital structure but certainly this statement is denied by other financial experts. So it leads to an open question whether any optimal point in the capital structure exists and if there exists an optimal point then what are the potential determinants. An extensive amount of research has been done on the related topic in developed countries and job of the researcher is to identify the potential determinants in a different market and also analyze that either the conclusions drawn from the different theoretical and empirical researches are valid enough for developing markets such as Pakistan. This paper basically addresses the question that what are the determinants of capital structure in Textile sector of Pakistan. There are different worldwide studies showing different results about financing behavior of companies. Previously Booth et al. (2001) have worked on the determinants of capital structure on ten developing countries including Pakistan based on KSE 100 index from 1980-1987. Shah and Hijazi (2004) did the

pioneering work in Pakistan in the field of capital structure and it provides a good base for further research.

We are specifically focusing on the textile sector because it is considered as a largest sector in Pakistan which has major share in exports so performance of this sector can make a strong and significant impact on the economy. Our sample includes 132 textile firms for 2001-09 period. Leverage is used as dependent variable and four independent variables including profitability, size, tangibility and growth were selected. Evidence lends more support to Pecking Order Theory of capital structure presented by Myers and Majluf (1984) in the textile sector of Pakistan for the period under review.

This paper is divided into five sections. Section II includes relevant literature followed by research objectives and methodology in section III. Section IV is devoted for analysis, results and findings while section V concludes.

2. Literature Review

Modigliani and Miller (1958) did the pioneering work in the field of capital structure by presenting Irrelevance theory in 1958. Miller and Modigliani theorem is said to be an irrelevance proposition. Their theory is based on the efficient market where there are no taxes, bankruptcy cost, agency cost and asymmetric information. They explained that the value of the firm is independent of its capital structure. It does not make any difference if the firm is raising its capital through issuing stock or selling debt. As this theory was based on some unrealistic assumptions it gave birth to other capital structure theories.

Trade-off theory states that the firm determines the optimal capital structure as a trade-off between interest tax shield and cost of financial distress. Trade-off theory also states that the firm's optimal capital structure is influenced by three fundamentals i.e. taxes, bankruptcy cost and agency cost. The main advantage of debt financing is that it results in increased after tax cash flows because interest payments are tax deductible expense and reduces the tax liability of the firm. The related cost of debt financing is bankruptcy and agency cost where the bankruptcy cost can be divided into direct and indirect bankruptcy cost. Direct cost includes cost of insolvency for the company as assets are sold at distress prices. The indirect cost of bankruptcy is related to the change in investment policies.

Agency cost as explained by Jensen and Meckling (1976) stated that the firm optimal capital structure is the point where agency cost is at minimum. This theory basically identified the possible conflict of interest between the managers and the share holders and between debt holders and share holders. Jensen (1986) Postulated one of the major problems that is availability of free cash flow to the managers. Managers working as agents use the cash flows sub optimally by investing in risky projects. Stulz (1990) suggested that his problem can be solved by increasing the stake of managers or reduce the availability of free cash flow by employing more debt as it also reduces the problem of over and under investment.

Ross (1977) presented signaling theory and stated that managers use signals to the outside investors in order to build investor's trust in the company by employing more debt as it serves as a positive signal. However due to asymmetric information newly issued equity is always perceived over priced and this perception leads to under pricing of the equity. Due to this reason whenever firm wants to start new projects and requires funding for it, it will not issue equity rather than use internally generated funds i.e. retained earnings. If it is not sufficient firm will go for debt financing and lastly they will issue equity to finance its new projects. This is termed as "Pecking Order theory" presented by Stewart c. Myers and Nicolas Majluf in 1984.

These theories provided the strong base to find out the determinants which influence firms gearing or leverage. Rajan and Zingales (1995) suggested that the gearing in the U.K companies has a strong relationship with size, profitability, its growth opportunities and tangibility. He found that gearing is positively associated with size and tangibility and negatively related with profitability and its growth opportunities. However it was argued by Bevan and Danbolt (2000) that the results of Rajan and Zingales (1995) were highly definitional depended considering the fact there are some difficulties involved in measuring the leverage. Bevan and Danbolt (2000) extended the work done by Rajan and Zingales (1995) on all non-financial firms in U.K and suggested that explanation of capital structure is incomplete without a comprehensive examination of all forms of corporate debts. Pandey (2001) examine the determinants of capital structure of Malaysian companies. By following Bevan and Danbolt (2000) he divided the debt component into three different category i.e. short term, long term and total debt. His results were quite consistent with Bevan and Danbolt (2000) and found a significant relationship between leverage and the variables identified by Rajan and Zingales (1995).

Kumar (2006) critically evaluated the underlying factors of firm financial leverage. He reviewed 107 papers published from 1991-2005. On the basis of review he concluded that formal theories such as irrelevance, static trade-off theory and pecking order theory are little helpful in determining the underlying factors of firms capital structure. There is no universal law about what determines the capital structure of the firm and empirical evidences have shown different impact of company's characteristics on the leverage (Kumar, 2006; Bevan and Danbolt, 2000). Antonio et al. (2006) argued that although the company specific factors strongly influences the capital structure decision but the financing behavior of the firm is also strongly affected by the market and economic conditions in which the firm operates. He compared the bank oriented economies with capital oriented economies and found different results in two categories. The capital oriented market countries included United Kingdom and United States and bank oriented economies included France, Germany and Japan. He found the positive relationship of leverage with firm's tangibility and size and negative relationship of leverage with firm's profitability and growth opportunities.

There are also some controversies regarding the time of equity issuance and how managers can minimize the cost of capital. Baker and Wurgler (2006) stated that cost of capital can be minimized by the managers by issuing equity when the share price is high, however it was counter argued by Hovakimian (2006) who suggested that market timing technique used by the managers to minimize the cost of capital is irrelevant and does not make any significant impact on firms optimal capital structure.

While the concentration was on the firms characteristics affecting the capital structure very little attention was given to the determinants of capital structure with an aspect of behavioral perspective. Barres and Selviera (2007) were the first one who analyzed over confidence and managerial optimism. They took the sample from Brazilian listed firms in the years 1998-2003. It has been argued that firms are mostly managed by overconfident managers and these managers will choose more levered financial structure. Other than firms characteristics and behavioral perspective it has been argued that capital structure is also strongly influenced by country specific determinants (Jong et al., 2007; booth et al., 2001).

There is a general consensus in the literature that the firms specific characteristics in the developing countries influence the capital structure in the same way as it affects in the developed countries but it is strongly and differently influenced by the country specific variables such as

GDP, inflation and stock market returns(Jong et al,2007;booth et al,2001).Fan et al(2006) extended the work by taking the large sample of 39 countries and their results were quite consistent with Booth et al(2001) who worked on ten developing countries including Pakistan. Qian et al. (2007) worked on the publically listed Chinese companies in the year 1999-2004 by following the variables identified by Rajan and Zingales (1995) with an addition of non-debt tax shield which is a substitute benefit for interest tax shield. Qian et al. (2007) stated that firm's size and tangibility are positively related to its leverage while non debt tax shield is negatively related to debt financing.

Following Booth et al. (2001) and Fan et al. (2006) a first study on selected ASEAN countries was conducted by Gurcharan (2010) by taking a sample of 155 listed companies from four selected ASEAN stock exchange index. There was a general consensus about the negative relationship of non-debt tax shield and firms leverage (Qian et al., 2007; Gurcharan, 2010).

The pioneering work on the determinants of capital structure in Pakistan was done by Shah and Hijazi (2004). They took the sample of 445 non-financial listed firms from the period 1997-2001. Shah and Hijazi (2004) argued that the variables identifies by Rajan and Zingales (1995) makes a significant impact on capital structure of Pakistani firms except the firms tangibility and does not confirm to the trade-off theory which states that the firms debt financing increases with more tangible assets (Myers, 1977). Rafique et al. (2008) worked on the chemical industry of Pakistan. They took the sample of 26 firms from Karachi stock exchange and found a positive association of firm's size and growth with its leverage, while profitability was found to be negatively related with firms leverage. On the contrary growth was considered as non influential variable in the explanation of firm's capital structure in life insurance sector of Pakistan (Ahmed et al. 2010). Shah (2007) worked on comparing the pre and post market reforms and found negative results about firm's size and leverage that confirms to the Rajan and Zingales (1995) view about the large firms having less asymmetric information which leads them to issue more equity.

3. Purpose and Methodology

The intent of this study is to analyze that what determinants are the significant predictors of firm's capital structure in Textile sector of Pakistan. Secondly what impact does the firm specific determinant makes on the capital structure of the firm. Moreover we also want to determine that

how much our results support formal capital structure theories. The basic crux of the research is to test the Trade-off theory and Pecking order theory and draw results that which capital structure theory has more support in the textile sector of Pakistan. In summary following are research objectives:-

- a. To identify the potential determinants that influences the capital structure.
- b. To identify which specific determinant significantly influence the financing behavior of textile sector.
- c. To test the robustness of the formal capital structure theories such as Trade-off theory and Pecking order theory.

This study is focusing on textile sector of Pakistan. After proper screening and filtering we dropped the firms with incomplete data. Following was selection criteria consist of three tests including; Firm must belong to the textile sector; Firm must be live during study period 2001-09 and third Firm must have comprehensive data for computation of required variables. Our initial sample was consisted of 182 firms in the textile and other textile sector. After critically examining the consistency and availability of data for each firm we were left with 162 firms as our sample. However based on our third criteria further 30 companies were dropped left with the final sample of 132 firms. Data was collected from the two volumes of balance sheet analysis published by state bank of Pakistan for the period under review.

Leverage is selected as dependent variable. From the literature we have analyzed different measures and definition of leverage. Leverage can be defined as “Percentage of assets financed by debt” (Rafique et al. 2008). Previously different measures of leverage have been used. Frank and Goyal (2003) stated the differences in debt ratio based on market value and book value. He argued that when we measure debt ratio based on market value it shows the future situation of the firm and when it is measured through book value it refers to the past situation. Rajan and Zingales (1995) defined leverage as a ratio of total debt to total assets. Fama and French (2000) stated that the difference in measuring two different debt ratios i.e. (book value and market value) leads to some inconsistencies. They also argued that the static trade-off theory and pecking order theory (POT) applies to the book value of debt not the market value. Previously work done on non financial listed firms by Shah and Hijazi (2004) used the book value measures. There is a general consensus in the literature that the main advantage of debt financing is the interest tax shield i.e. interest payments are tax deductible and it results in cash

savings and once the debt is issued the benefits of tax shield are unchanged by market value (Shah and Ijaz, 2004; Rafique et al., 2008; Banerjee et al., 2000). So it clearly indicates that market value of the debt when measuring leverage is irrelevant. Shah and Hijazi (2004) also pointed out the crucial cost associated with the debt financing. They argued that when a firm goes for debt financing the dominating cost a firm must incur is the chances of going bankrupt. And if the firm faces a financial distress and goes into bankruptcy then the most related value of debt is the book value not the market value.

Other concern about measuring the appropriate leverage is to take the long term debt, total debt or short term debt. Empirical evidences have shown different impact of firm's characteristics on different component of debt (Bevan and Danbolt, 2000). Different capital structure theories are mostly relevant to long term debt as a proxy of leverage (Rafique et al., 2008). However in Pakistan the average size of the firms is small and they prefer short term debt over long term debt financing. Shah and Hijazi (2004) stated that the basic reason behind the firms using short term debt is that in Pakistan commercial banks are the lenders and they do not encourage long term loans. In the mid 1994 government allowed the companies to raise debt directly from the market in the form of TFC's (term finance certificates). So it indicates a weak history of corporate debt market in Pakistan. Booth et al. (2001) also argued that use of short term financing is much higher than long term financing in developing countries including Pakistan. So being consistent with Shah and Hijazi (2004) this study measures the ratio of total debt to total asset as a proxy of leverage. We are measuring leverage as debt to asset ratio rather than debt to equity because cost or risk associated with debt financing is the increased probability of going bankrupt and debt to asset ratio measures the financial risk of the company. So this measure is more appropriate for the study incorporating capital structure and financial risk of the firm, hence $\text{Leverage} = \frac{\text{total debt}}{\text{total assets}}$, being the proxy for independent variable of this study.

Four independent variables including tangibility, size, profitability and growth are selected for analysis and findings. The benefit of having large value of fixed assets is its collateral value. Firm having large fixed assets can easily borrow at a lower interest rate and it leads to more debt financing because of lower cost of borrowing. Previous researches and capital structure theories have identified different impact of firm's tangibility on its leverage. Static trade-off theory is of the view that firms having more fixed assets will favor more debt financing

as it will serve as collateral against the loan as the agency cost for the firms having large amount of fixed assets will be lower. But there are some contradictory views in the pecking order theory. Harris and Raviv (1990) stated that firms with low levels of fixed assets will favor more debt financing because they have problems of asymmetric information and the only way they can issue equity is by under pricing it. While firms having large amount of fixed assets have less asymmetric information problem favoring them issue more equity at fair prices.

Previously different studies have used different measures of firms tangibility however in this study we use the ratio of fixed asset to total asset. One consideration is to either take the total gross amount fixed assets or net depreciated value of fixed assets. By following Shah and Hijazi (2004) we will take gross amount of fixed assets rather than net depreciated value because of two reasons. **First;** different firms in Pakistan might be using different depreciation methods which may create uneven data (Shah and Hjaz, 2004). **Second;** Even an asset has been fully depreciated a firm can pledge it based on its market value (Rafique et al. 2008). Hence for this study, Tangibility = Total fixed assets/total assets. We expect a positive association of firm's tangibility with leverage consistent with the empirical predictions of the trade-off theory.

Hypothesis 1: Firms having higher ratio of fixed assets will borrow more

In this study we selected natural log of sales volume as a measure of firm's size. Different theories of capital structure have stated different relationship of firm's size with the leverage. In the light of pecking order theory Rajan and Zingales (1995) stated that the relationship between size and leverage will be negative because of a reason that large firms have less asymmetric information so it certainly leads to more equity issuance because they can issue the equity at fair prices. The chances of undervaluation of new equity issue will be at minimum because of having less asymmetric information leads to less debt financing. On the other hand with respect to trade-off theory relationship between size and leverage will be positive as Shah and Hijazi (2004) argued that due to the diversification of large firms they have less chances of bankruptcy favoring them to use more debt financing. Titman and Wessels (1988) stated that direct bankruptcy cost is not considered as an active variable in financing decision of large firms so they will borrow more. Empirical evidences in Pakistan have found significant impact of size on firms leverage. Shah and Hijazi (2004) found a positive relationship of firm's size with leverage and the results were consistent in the study done by Rafique et al. (2008) who worked on the chemical sector of Pakistan. Ilyas(----) argued that large firms have less chances of falling

into financial distress and they consider fixed bankruptcy cost of a very smaller value ,so they are fearless to borrow. Following Ilyas (----) and Shah and Hijazi (2004) we are also expecting a positive relationship between size and leverage consistent with the empirical prediction of trade-off theory.

Hypothesis 2: Size of the firm is positively related to firms leverage

With respect to business performance profitability makes a significant impact over the long run and short run. Shah (2007) argued the importance of profitability from the long run perspective that if a business is to run continuously then firm must earn an appropriate return. In the short run a sufficient profit earning is necessary to pay for variable cost and also for some short term response to minimize losses. The relationship of profitability with leverage is quite opposite from the view of different capital structure theories. According to trade-off theory high profitable firms tends to reduce their tax burden by issuing more debt. Keeping this view one would expect a positive relationship between firm's profitability and leverage. On the other hand pecking order hypothesis explains the negative relationship of firm's profitability and leverage. Profitable firms have enough earning capacity. As firm will prefer internally generated funds i.e. retained earnings to finance its new projects, so they will not go for debt financing. (Myers and Majluf, 1984).With respect to pecking order hypothesis one can expect a negative relationship of profitability with firms leverage. In previous work done by Shah and Hijazi (2004) profitability turned out to be most significant and influential determinant of capital structure with its negative relationship with the leverage. Rafique et al. (2008) also found a negative relationship of profitability with leverage. In this study we are expecting a negative relationship of profitability with leverage consistent with the pecking order hypothesis.

Hypothesis 3: There is negative relationship between profitability and leverage.

One of the concerns is about the measurement of profitability. As in previous researches profitability was measured as ratio of earnings before interest and tax divided by total assets. Rajan and Zingales (1995) have used earning before interests, tax, depreciation and amortization (EBITDA) to total assets as a proxy for measuring profitability. We are more inclined towards earning capacity of the firm which is depicted through operating income. So by taking a different measure from Shah and Hijazi (2004) and Rafique et al. (2008) we will calculate profitability as a ratio of earnings before interest and tax to total assets, hence for this study, Profitability = $EBIT/Total\ assets$.

Pecking order hypothesis explains the relationship of growth and leverage to be positive. As growing firm does not have enough retained earnings to finance new projects so as a next preferable option it will go for debt financing. On the other hand with respect to trade-off hypothesis Shah and Khan (2007) stated that the agency cost for the growing firms will be higher. One reason is that the growing firms are very much flexible while concerning their future investment and they invest in more risky projects. This creates a significant impact on the decision taken by lenders. It has been argued that cost of borrowing for the growing firms will be much higher because the lenders will consider that their investment is at risk in future (Shah, 2007; Shah and Hijazi, 2004; Shah and Khan, 2007). Rafique et al. (2008) stated that firm with more growing opportunities will use less debt financing as growth opportunities cannot serve as a collateral because of its intangible nature. Keeping this in view one may expect a negative relationship of growth with leverage. Empirical evidences have also found a negative relationship of growth and leverage. (Shah and Hijazi, 2004; Titman and Wessels, 1988). On the other hand Rafique et al. (2008) found a positive relation of growth with leverage. Initially we expect that growing firms in Pakistan does not have sufficient internally generated funds to finance its projects so it will go for debt financing as a next preferable option. So remaining consistent with the pecking order hypothesis we are expecting a positive relationship between growth and leverage.

Hypothesis 4: There is positive relationship between growth and leverage.

Previous studies have used different measures of firm's growth. A growing firm heavily invests in research and development so some researchers have measured growth as ratio of research and development expenditure to total sales and percentage change in total assets (Titman and Wessels, 1981). It is argued that some firms working locally may not be spending much amount on research and development but still expanding business. As we are taking the data from balance sheet analysis of listed companies published by state bank of Pakistan. It does not provide us with the information on research and development expenditure incurred by the firm. So following Shah and Hijazi (2004) we will measure growth of a firm as a percentage change in total assets, hence for this study, $\text{Growth} = \text{\%age change in total asset}$

This study was conducted by using panel data regression model. And we used pooled regression type of data analysis. After including our variable in general form of model the equation was tested.

$$LG_{it} = \beta_0 + \beta_1 (TAN_{it}) + \beta_2 (SZ_{it}) + \beta_3 (PROF_{it}) + \beta_4 (GR_{it}) + \epsilon$$

Where

LG = Leverage

β_0 = Intercept of the equation.

TAN = Tangibility

β_1 = The change coefficient for X variable.

SZ = Size

X_{it} = Independent variables for leverage

PROF = Profitability

i = Number of firms

GR = Growth

t = time period

ϵ = Error term

4. Analysis and Results

Table 1 shows the descriptive statistics for our dependent and independent variables. Descriptive statistics shows that on average basis the textile industry use more debt financing in its capital structure. The mean value of 0.74 indicates high debt ratio of the average industry or 74 percent of its total assets are financed through debt. The standard deviation value is 42 percent which indicates high variation in debt financing and we can say that in many cases the firms have more debt as compare to their assets. On the other hand average industry equity financing is 26 percent. While calculating debt to asset ratio we have found negative equity for many firms because ideally the debt ratio should be less than 1 but as the value of maxima indicates that due to negative equity for many firms the ratio is more than 1. On the average basis the profitability condition of the industry is not appreciable as the average profitability ratio is 6 percent with the standard deviation of 14 percent for textile sector which is considered to be the largest sector of Pakistan.

The average tangibility ratio for the entire industry is very high as the mean value is .94 which means industry has 94 percent as tangible assets in its total assets. Such a high ratio for the tangibility is well justified for this sector. While calculating tangibility ratio for many of the firms it came out to be greater than 1. As ideally or theoretically this ratio has to be less than 1 but we have taken the proxy of tangibility as gross amount of fixed asset that is why this ratio is higher than 1. Shah and Hijazi (2004) explained that the ratio of higher than 1 for tangibility shows the higher gross value of the assets that are depreciated but not yet disposed off and the firm has sufficient number of these assets that's why the gross value is higher than the total depreciated value. The average growth for textile sector is 12 percent with a standard deviation

of 5 percent. The industry must look into the high debt ratio in its capital structure as there is certain cost that is associated with debt financing which leads to the possible future financial distress. Many firms showed negative equity which is a strong indication of insolvency.

Next to analyze whether there is possibility of multi co linearity among the independent variables we have calculated Pearson's coefficient of correlation. Table 2 shows the result of correlations among the independent variables. The results show clearly that there is no evidence of multi co linearity among the four independent variables. The highest positive correlation between two variables is 0.163 and it is the correlation between size and profitability. Moreover results shows that there is a negative correlation between tangibility of a firm and its profitability. One interesting correlation is between the tangibility and size of the firm which indicates that firms that are large in size retain less amount of fixed asset while firms which are smaller in size have higher ratio of fixed assets to total assets. Tangibility is also negatively related to growth of the firm suggesting that growing firms have fewer amounts of fixed assets. Profitability is positively related to size of the firm which indicates that firms that are large in size are more profitable. Profitability is also positively correlated with growth which indicates that growing firms are more profitable. The final observation is that size is positively correlated to the growth of the firm. This relationship is positive because large firms are generally considered to be financially strong and they have enough capacity to invest more in research and development which leads to create more growth opportunities for the large firms thus generating more profits.

To determine that whether data is stationary in the panel structure we have applied 6 panel unit root tests which are considered to be as most powerful test for analyzing panel data. Most of the panel unit root tests are derived from traditional ADF with a slight modification and extension. Here some of the tests assume the condition of balanced panel while others assumes unbalanced panels. LL, Breitung t-stat and Hadri Z stat assumes common unit root process while IPS, ADF fisher and PP fisher assumes individual unit root process. Moreover the first five tests has a null of unit root while Hadri Z stat has a null of no unit root. Table 3 provides us strong and consistent evidences of stationary data, thus we can confidently say that there is no such problem of unit root and regression results will not be spurious.

We have applied pooled form of regression this is also known as constant coefficient model. This model has some restrictive assumptions about the slope and the intercept. Constant

coefficient model assumes both slope and intercept to be constant. As data is only from the Textile sector so common effects shall be used to explore the relationships as no industry effects exists. The following table shows the results.

Table 4 shows the results of the regression model. The variation explained by our four independent variables on the dependent variable (Leverage) is only 9% approx. as the r-squared value is 0.0867. The adjusted R-squared value is 0.0836 which is slightly below the value of R-squared. The F test statistic is 28.0873 and prob F (statistic) of 0.0000 shows the validity and significance of the model. The first independent variable is profitability. Our hypothesis was in the support of Pecking order theory and suggested the negative relationship between debt financing and profitability of a firm. Profitability has obtained a negative coefficient -0.1795 which indicates that profitability has a strong relationship with debt financing. The results confirm to the empirical prediction of the pecking order theory and consistent with the view of Myers and Majluf (1984) that profitable firms have sufficient retained earnings so when there is a new project the funding requirement is fulfilled by internally generated funds and debt financing is not appreciated. The results are also consistent with Shah and Hijazi (2004). Profitability has a t- statistic -2.186 and p-value of 0.029. The p-value of 0.029 indicates that the relationship between leverage and profitability is statistically significant at 5 percent level. Thus we accept our earlier hypothesis regarding profitability and leverage and we can say that pecking order Theory has support in textile sector of Pakistan regarding profitability and leverage of the firm.

Our hypothesis regarding size of the firm was consistent with trade-off theory that suggests that size of the firm is positively related to debt financing because the direct bankruptcy cost is well diversified in large firms. However the result indicates negative relationship of size and debt financing of the firm. Size obtained a negative coefficient of -0.0516 which suggests that debt financing of the firm decreases when the firm size is large. The results do not confirm to empirical prediction of the static trade-off theory but confirms to the empirical prediction of the pecking order theory and also consistent with the view of rajan and zingales (1995) version of pecking order theory. Thus we reject our hypothesis regarding size of the firm. The results are contradicting to the findings of shah and Hijazi (2004) who observed the positive association of size and debt financing. The explanation of this negative relationship is that large firms have less asymmetric information so there newly issued equity will not be perceived as over priced by the

outside investors so a large firms can issue equity at fair prices thus leads to more equity financing. Size has t-statistic of -5.21 and p-value of 0.0000 which indicates that the relationship is strongly statistically significant. We can say that pecking order theory again has more support regarding its empirical prediction of relationship between size of the firm and use of debt finance in its capital structure.

Our hypothesis regarding the tangibility of the firm was consistent with the empirical prediction of the trade-off theory. The results show that tangibility is found to be positively related to leverage. Tangibility obtained a positive coefficient of 0.21 which indicates that tangibility is positively correlated with leverage thus the positive coefficient confirms our earlier hypothesis of positive relationship between tangibility and debt financing. The results are also consistent with the findings of shah and Hijazi (2004) however their relationship was not statistically significant. Positive relationship of tangibility also supports the trade-off version of Jensen and Meckling (1976) which incorporates agency cost of debt financing. The results prove that firms which have higher portion of fixed assets will use more debt financing in their capital structure because fixed assets can serve as a collateral for taking debt from the banks and the creditors consider investment in less riskier hands thus the agency cost for firms with large amount of fixed assets will be minimum which leads to more debt financing. Positive relationship is also consistent with the explanation given by Myers (1977) in his version of trade-off theory that firms having large figure of fixed assets in their balance sheet will go for more debt financing. Tangibility has t-statistic of 5.949 and p-value of 0.0000 which indicates that the relationship is highly statistically significant. The results also depicts that tangibility is the most influential and most statistically significant variable among the four independent variables. Thus we can confidently say that trade-off theory has more empirical support in the textile sector of Pakistan regarding its relationship with debt financing.

Our hypothesis about growth opportunities of the firm and use of debt financing was based on the empirical prediction of extended version of Pecking order theory. However the observed relationship is found to be negative which suggests that growing firms will use less debt financing in their capital structure. Growth obtained a negative coefficient of -0.014 which confirms to the empirical prediction of trade-off theory thus we reject our earlier hypothesis. The explanation of this negative relationship is that growing firms invests in riskier projects so banks will charge higher cost of debt as their investment is at risk, thus the agency cost will be higher

for growing firms. On the other hand statistically this relationship is not found to be significant as growth has t-statistic of -0.585 and p value of 0.558 which indicates that the results are not reliable. Thus we reject the empirical prediction of both formal conventional theories i.e. pecking order and trade-off and also rejects our hypothesis. The following table provides a summary of expected/observed relationships and their statistical significance.

5. Conclusion

This study documented the determinants of corporate financing structure with reference to the formal theories i.e. Trade-off and Pecking order theory. 132 firms from the textile sector were selected as final sample for the period 2001-2009. For the purpose of measuring debt financing or Leverage the proxy of total debt to total assets has been used. To test the hypothesized prediction of the theories (Trade-off theory and Pecking OT) four explanatory variables including profitability, size, tangibility and growth were selected. Moreover two substitutable theories also explained the relationships of these variables with the dependent variable. To check the stationarity of the data five panel unit root tests have been applied in order to avoid spurious regression results. Pair wise correlation was also applied to check the Multi co linearity among the independent variables and the results showed that this problem doesn't exist in our study. Two of the hypothesis regarding size and tangibility were consistent with the Trade Off Theory while the other two hypotheses were supporting the Pecking Order Theory regarding the profitability and Growth. Constant coefficient model has been applied to explore the relationships.

Results of the model shows that tangibility is positively related to leverage confirming trade-off hypothesis and the relationship was statistically significant. Size was measured by taking LN (Sales) is found to be negatively related to leverage rejecting Trade-off empirical predictions. Profitability was measured as Return on assets and earnings before interest and taxes were used in nominator. Regression results showed that profitability has a significant and negative association with the debt financing confirming Pecking order hypothesis. Finally growth found to be negatively related to leverage confirming Agency cost theory. Evidence lends more support to Pecking Order Theory of capital structure presented by Myers and Majluf (1984) in the textile sector of Pakistan for the period under review.

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Table 1- Descriptive statistics

	Leverage	Profitability	tangibility	Size	growth
Mean	0.7465	0.0606	0.9441	6.8439	0.1259
Median	0.6986	0.0605	0.8919	6.7904	0.0589
St.d deviation	0.4282	0.1469	0.3483	1.3042	0.5003

Table 2-Results of correlation among independent variables

	Profitability	Tangibility	Size	growth
Profitability	1			
Tangibility	-0.074	1		
Size	0.163	-0.357	1	
Growth	0.054	-0.131	0.118	1

Table 3-Group unit root test summary (Leverage, Profitability, Growth, Tangibility, Size)

Type of test	Statistics	Prob
Levin, LIL and chu test	-11.5195	0.0000
Breitung t- stat	-13.954	0.0000
Lm, pesaran and shin W stat	-19.3714	0.0000
ADF fisher chi square	344.685	0.0000
PP fisher chi square	640.069	0.0000
Hadri Z stat	0.57112	0.284

Table 4-Constant Coefficient model output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PROFITABILITY	-0.179567	0.082128	-2.186446	0.029
SIZE	-0.051648	0.009903	-5.215356	0.000
TANGIBILITY	0.218637	0.036749	5.949407	0.000
GROWTH	-0.014097	0.024076	-0.585524	0.5583
R- squared	0.0867			
F-statistic (Probability)	28.0873 (0.000)			

Table 5-Summary of results (constant coefficient model)

Dependent independent variables	Proxy	Expected relationship	Empirical prediction of theory	Observed relationship	Empirical prediction of theory	Statistical significance
Leverage	TD/TA					
Profitability	EBIT/TA	Negative	Consistent with POT	Negative	Consistent with POT	significant
Size	N log sales	Positive	Consistent with TOT	Negative	Consistent with POT	significant
Tangibility	TFA/TA	Positive	Consistent with TOT	positive	Consistent with TOT	significant
growth	% Δ TA	Positive	Consistent with POT	Negative	Consistent with TOT	insignificant